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ELECTRICITY MARKET REVIEW



ISET POLICY INSTITUTE

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INFORMATION

- In June 2023 there was a decrease in the total electricity generation by 8% on a yearly basis and increase by 3% on a monthly basis.
- Consumption decreased by 9% on a yearly basis and by 5% compared to the previous month.
- Generation exceeded consumption by 387 mln. kWh which was 28% of the total generation and 39% of the total consumption in June 2023.
- There were imports of 0.016 mln. kWh in June.
- The main import partner country was Azerbaijan.
- There were exports of 341 mln. kWh in June.
- The main export partner country was Turkey.
- The price of imports reached 6.63 ¢, or 17.34 tetri per kWh.
- The price of exports reached 6.54 ¢, or 17.13 tetri per kWh.
- The HHI index for the Georgian electricity generation market remained above the threshold of highly concentrated market. In June 2023, its level was 4,380.
- The HHI for the Georgian electricity consumption market remained below the threshold of a highly concentrated market. In June 2023, its level was 2,147.

ABBREVIATION USED

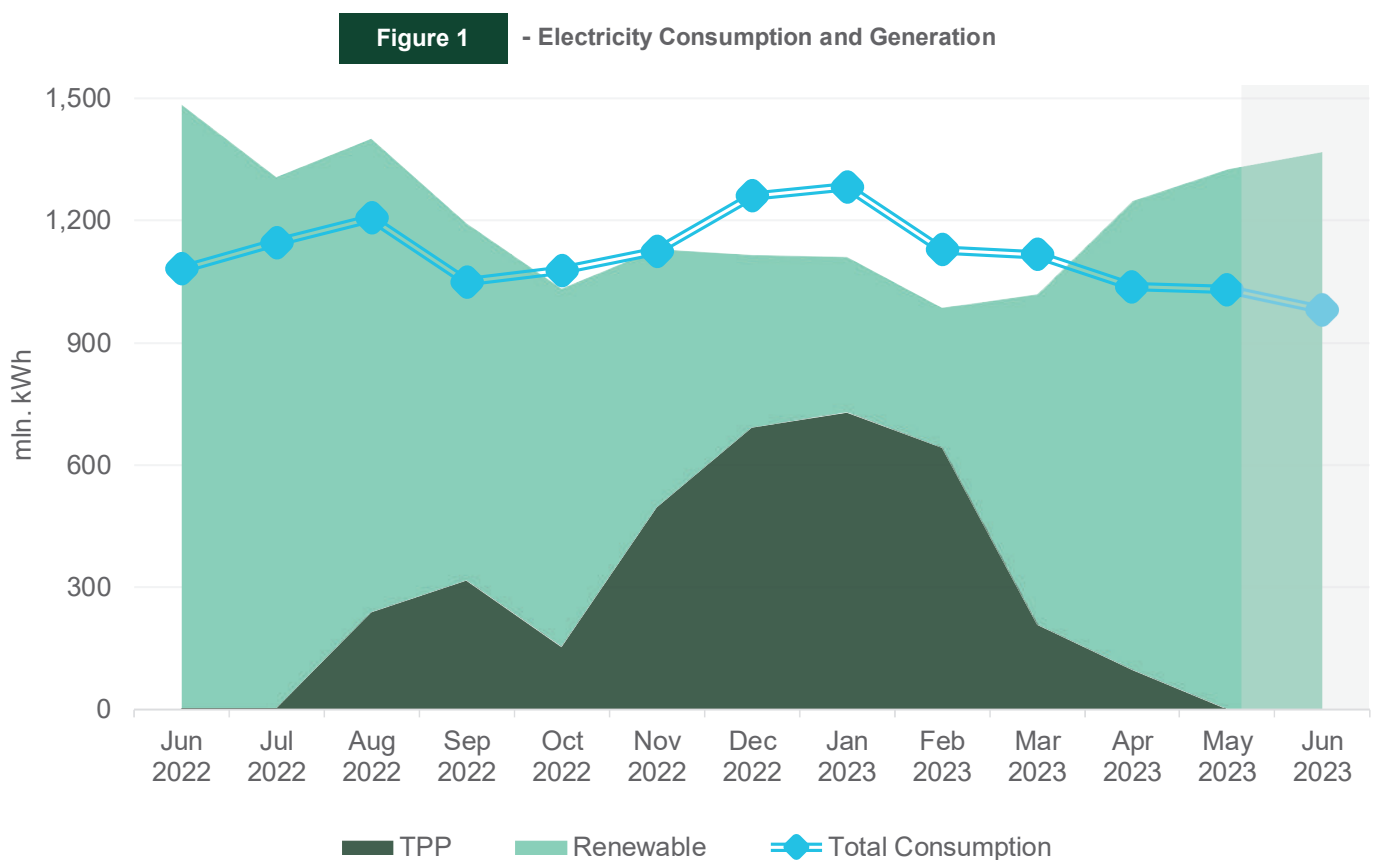
Mln	million
kWh	kilowatt-hour
HPP	Hydro Power Plant
WPP	Wind Power Plant
TPP	Thermal Power Plant
HHI	Hirschmann-Herfindahl Index
Telmico	Tbilisi Electricity Supply Company
Ep Georgia	Ep Georgia Supply
Geostat	National Statistics Office of Georgia
ESCO	Electricity System Commercial Operator

Generation – Consumption – Trade

In June 2023, Georgian power plants generated 1,369 mln. kWh of electricity (Figure 1). This represents a 8% decrease in the total generation compared to the previous year (in June 2022, the total generation was 1,485 mln. kWh). The decrease in generation on a yearly basis comes from a fall of 8% in Hydro and 9% in wind and 46% in thermal power generation.

On a monthly basis, the generation increased by approximately 3% (in May 2023, the total generation was 1,325 mln. kWh) (Figure 1). The monthly rise in total generation is induced by a 3% increase in hydro and 104% in thermal power generation, while wind power generation decreased by 30%.

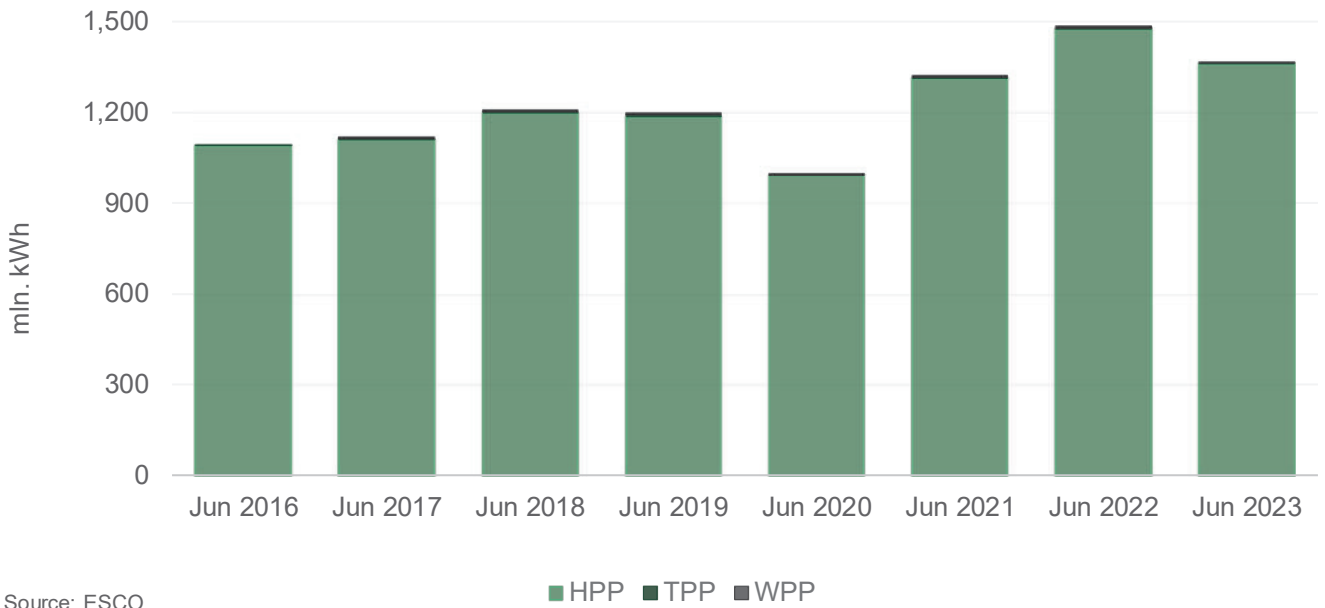
The consumption of electricity on the local market was 981 mln. kWh (-9% compared to June 2022, and -5% compared to May 2023) (Figure 1). In June 2023, power generation exceeded consumption by 387 mln. kWh which was 28% of the total generation and 39% of the total consumption (in June 2022, the difference between the total generation and the consumption resulted in a surplus of 403 mln. kWh, around 27% of the total generation and 37% of the total consumption for the month).



Source: Electricity System Commercial Operator (ESCO)

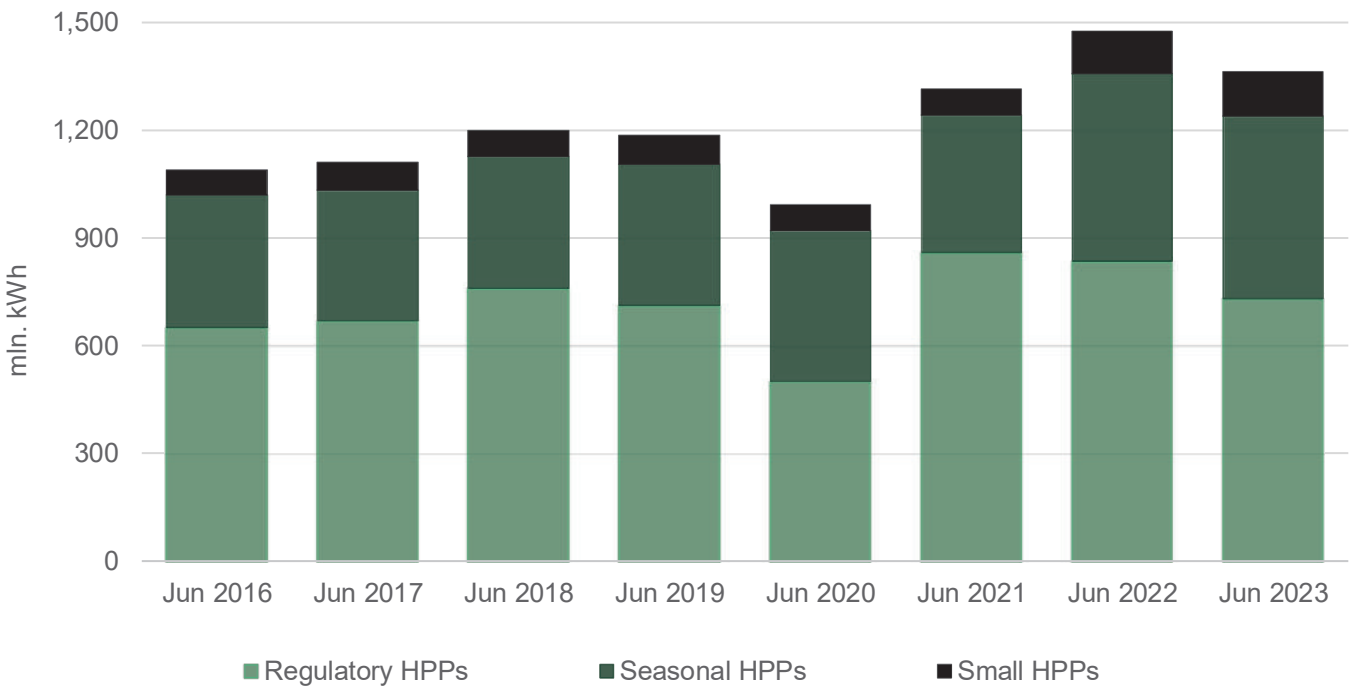
In June 2023, hydro power plants were the leading source of generation. In June 2023, hydro power (HPP) generation amounted to 1,361 mln. kWh (99.5% of total), thermal power (TPP) generation was 2 mln. kWh (0.1% of the total generation), while wind power (WPP) generation amounted to 5 mln. kWh (0.4% of the total generation) (Figure 2).

Figure 2 - Electricity Generation by Sources



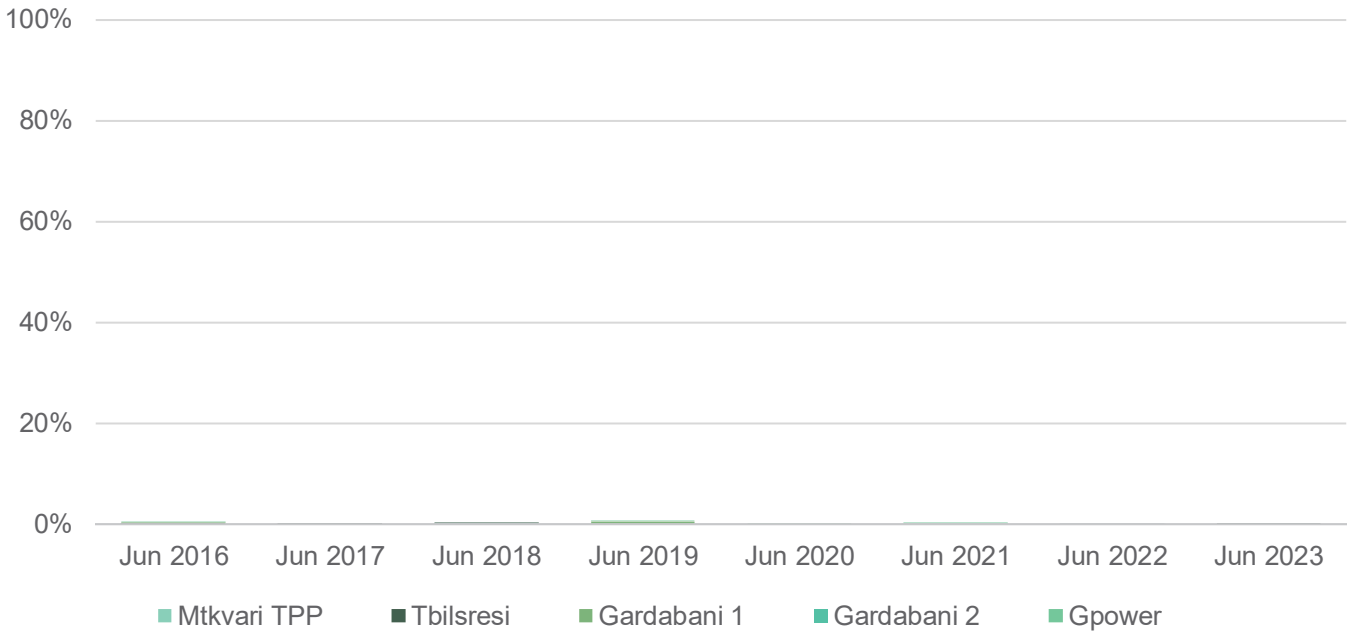
Among hydropower generators, large (regulatory) HPPs produced 53% (731 mln. kWh) of electricity, while seasonal and small HPPs produced 37% (509 mln. kWh) and 9% (121 mln. kWh), respectively (Figure 3).

Figure 3 - HPP Generation by Type



As for thermal power generation, Tbilisres generated 2 mln. kWh electricity (100% of TPP generation and 0.1% of total power generation) (Figure 4).

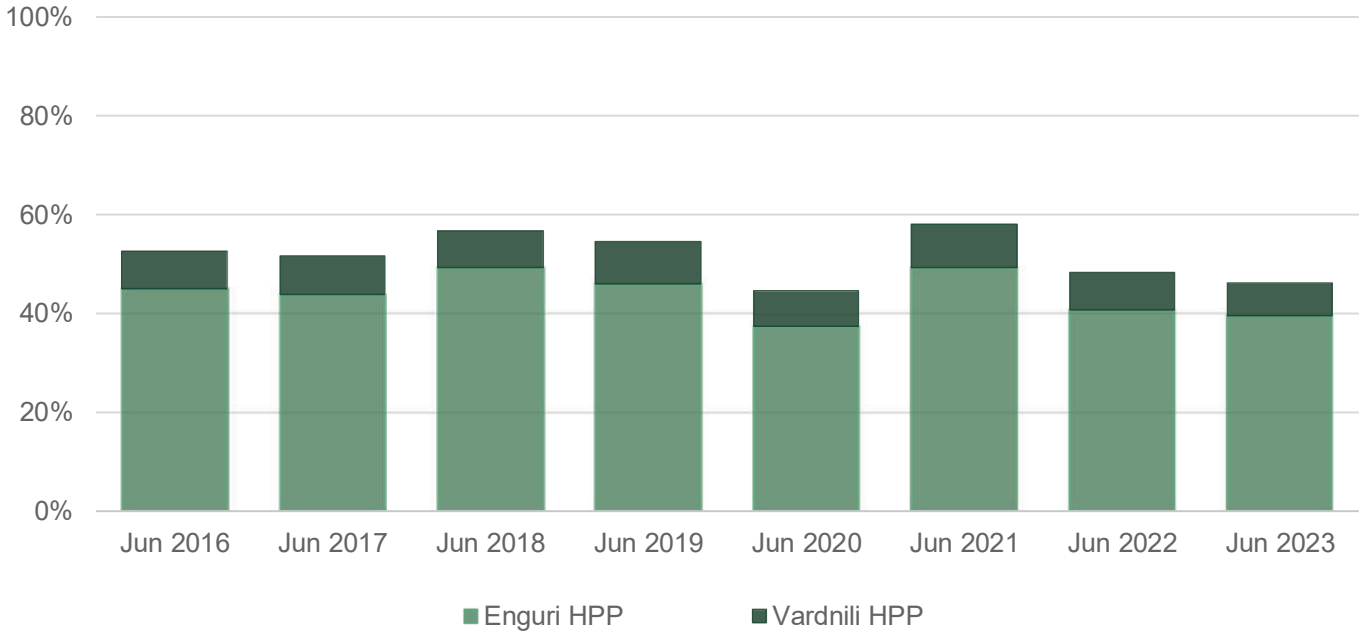
Figure 4 - Share of Large TPPs in Total Generation



Source: ESCO

As for HPP generation, Vardnili HPP generated 90 mln. kWh (12% of generation for regulatory HPPs and 7% of total generation). Enguri HPP generated 543 mln. kWh, which represents 74% of generation of regulatory HPPs and 40% of total generation (Figure 5).

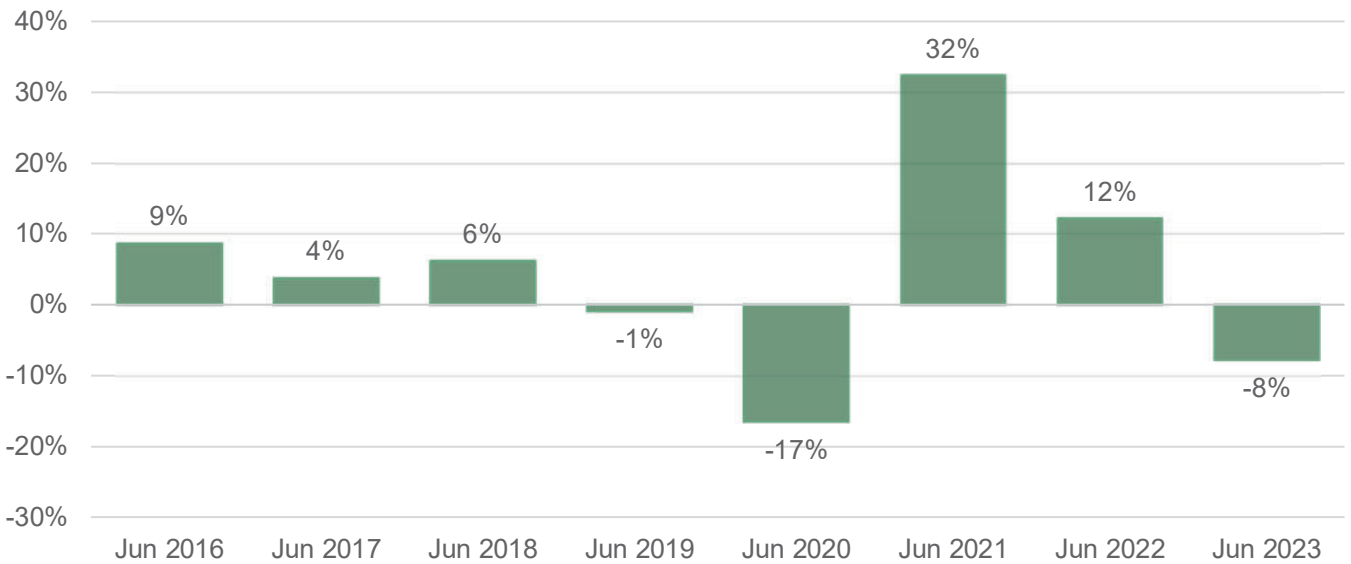
Figure 5 - Share of Enguri and Vardnili in Total Generation



Source: ESCO

Overall, the total generation decreased by 8% compared to June 2022 (Figure 6).

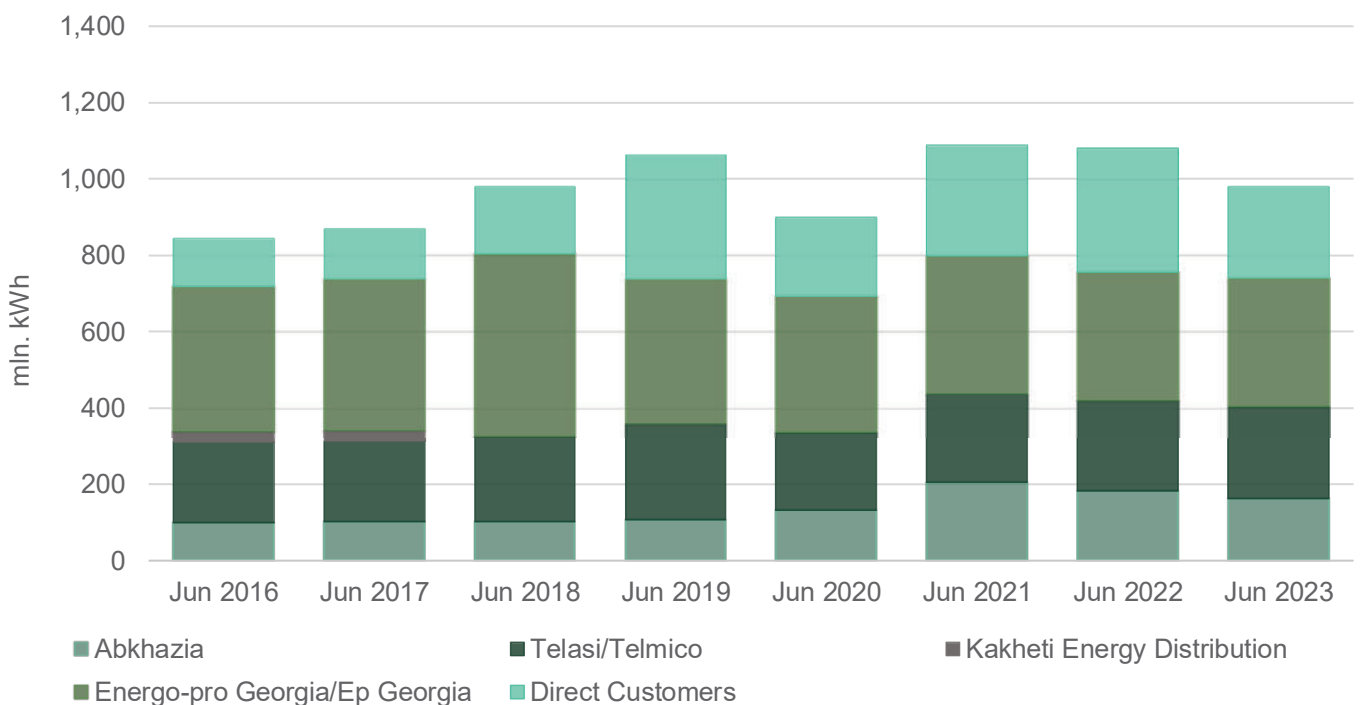
Figure 6 - Growth of Generation (% y/y)



Source: ESCO

Total electricity demand came from: Energo-Pro Georgia/Ep Georgia¹ (34% - 337 mln. kWh), Abkhazia (17% - 163 mln. kWh), Telasi/Telmico² (25% - 242 mln. kWh), and direct customers (24% - 238 mln. kWh) (Figure 7). Annual demand from Abkhazia and direct customers fell by 11% and 27%, while it increased from Telasi/Telmico and Energo-Pro Georgia/Ep Georgia by 3% and 0.3%, respectively. Overall, there was an annual decrease of 9% in the total electricity consumption in June 2023, compared to June 2022 (Figure 8).

Figure 7 - Electricity Consumption by Type of Consumer

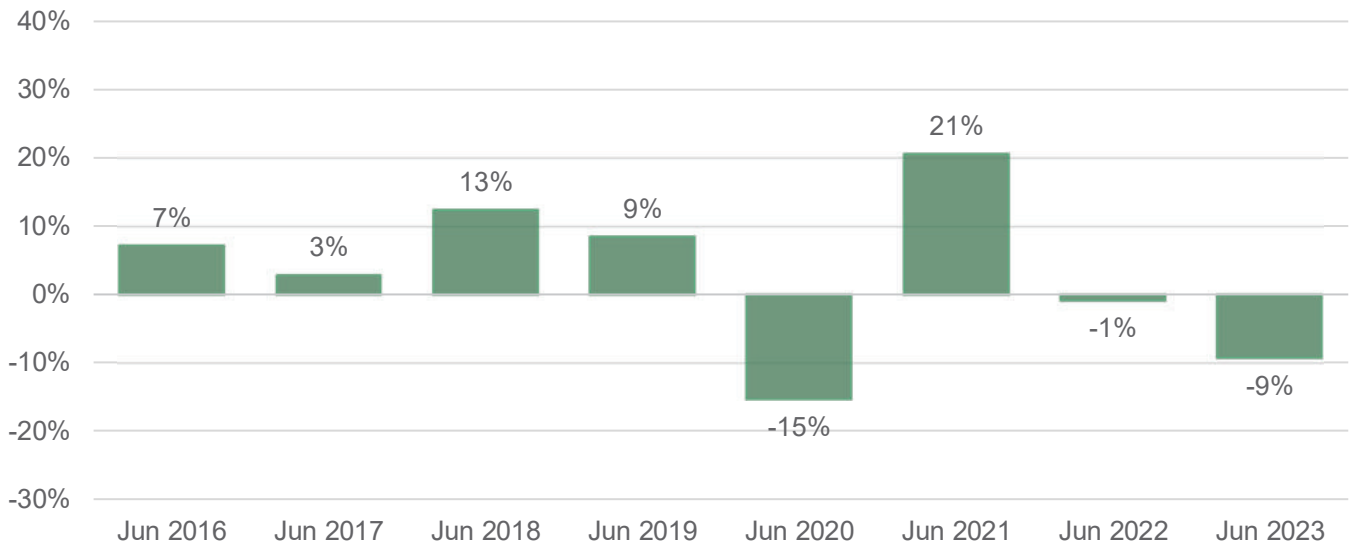


Source: ESCO

¹ Energo-Pro Georgia acquired Kakheta Energy Distribution in September 2017.

² Since 1st of July 2021, after adoption of a new electricity market model concept, operations of distribution and final supply have been disentangled, thus three different groups of players appeared on the market, Distribution Licensees - responsible for distribution activities and covering losses in the distribution network - Universal Service Suppliers - responsible for providing electricity to residential sector and small enterprises and Public Service Organizations – responsible for providing electricity to medium and large enterprises upon the written agreement. Currently, Energo-pro Georgia and Telasi continue their distribution activities, while EP Georgia Supply and Tbilisi Electricity Supply Company (Telmico) have been separated from them and play the role of both Universal Service Suppliers and Public Service Organizations.

Figure 8 - Electricity Consumption Growth (% y/y)

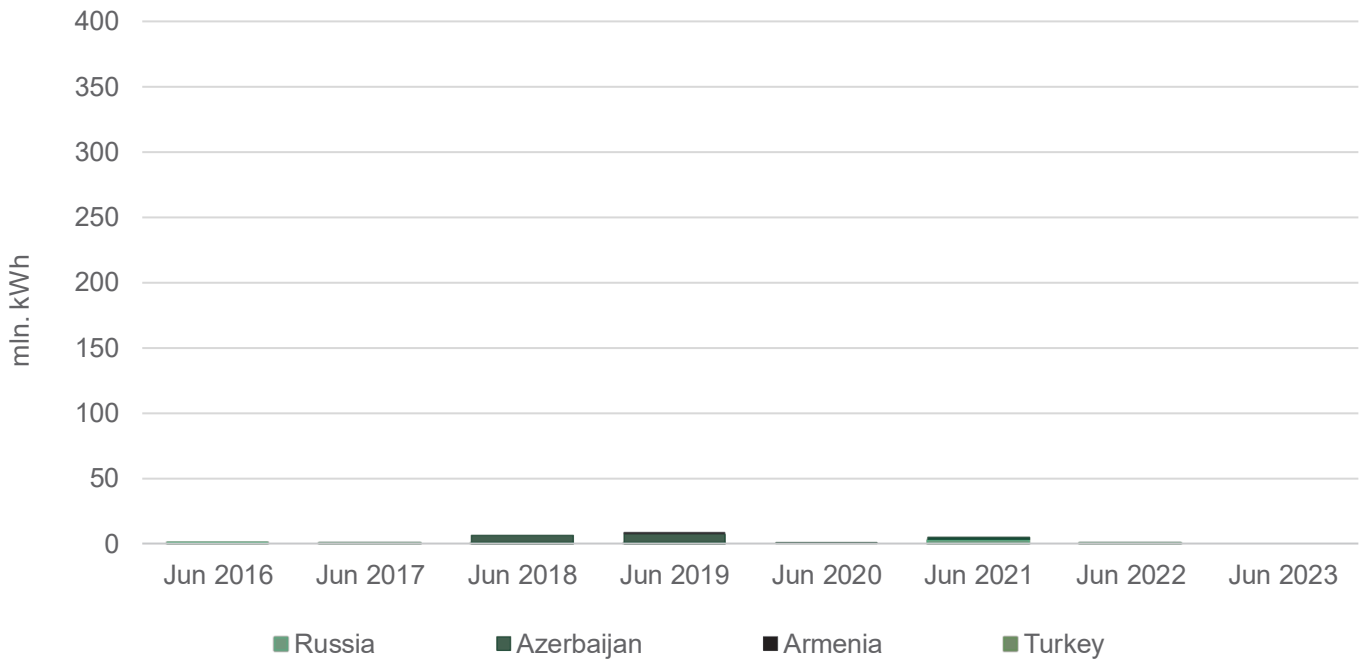


Source: ESCO

In June 2023, there was an import of 0.016 mln. kWh of electricity to Azerbaijan (in June 2022, there was 0.6 mln. kWh of electricity imports to Russia) (Figure 9). In June 2023, there was an export of 341 mln. kWh of electricity (compared to 351 mln. kWh in June 2022) (Figure 10). 74% of this export went to Turkey, 22% went to Azerbaijan and 3% to Armenia (in June 2022, 84% of exports went to Turkey, 16% to Armenia and insignificant amount to Russia and Azerbaijan). There was no transit in June 2023 (in June 2022, there was 71 mln. kWh transit from Azerbaijan to Turkey and 21 mln. kWh from Russia to Turkey).

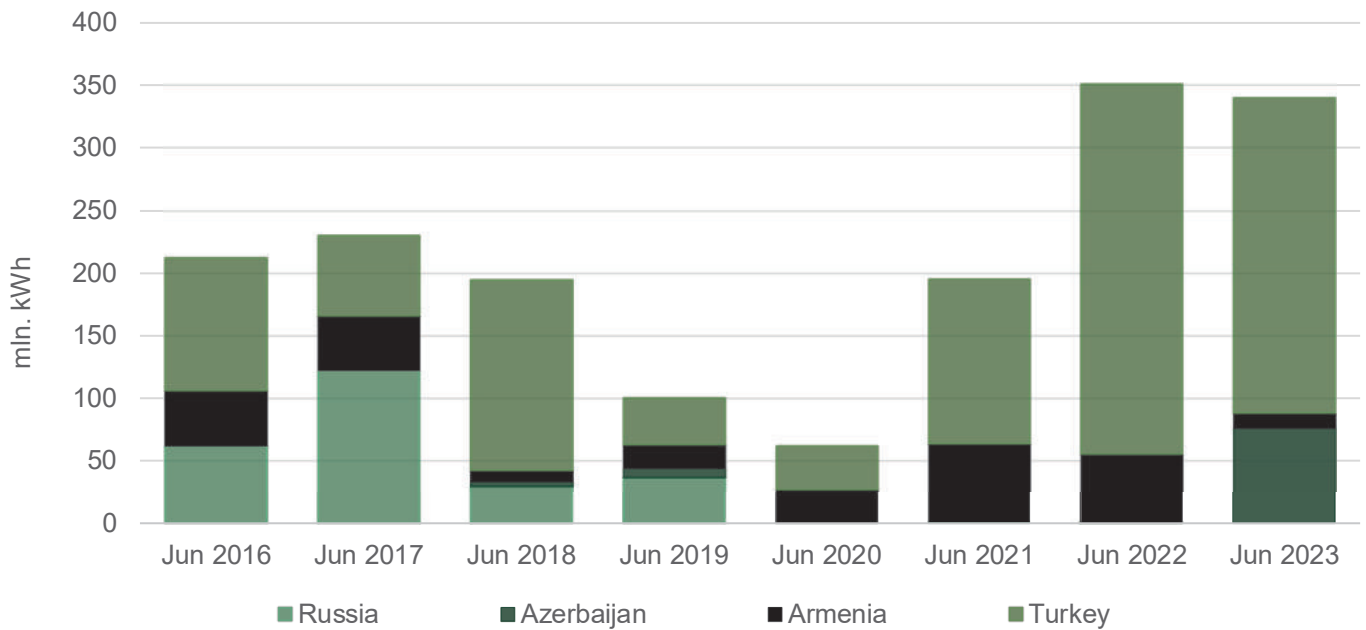
In June 2023, imports decreased by 97% compared to June 2022, while exports decreased by 3%.

Figure 9 - Imports by Year



Source: ESCO

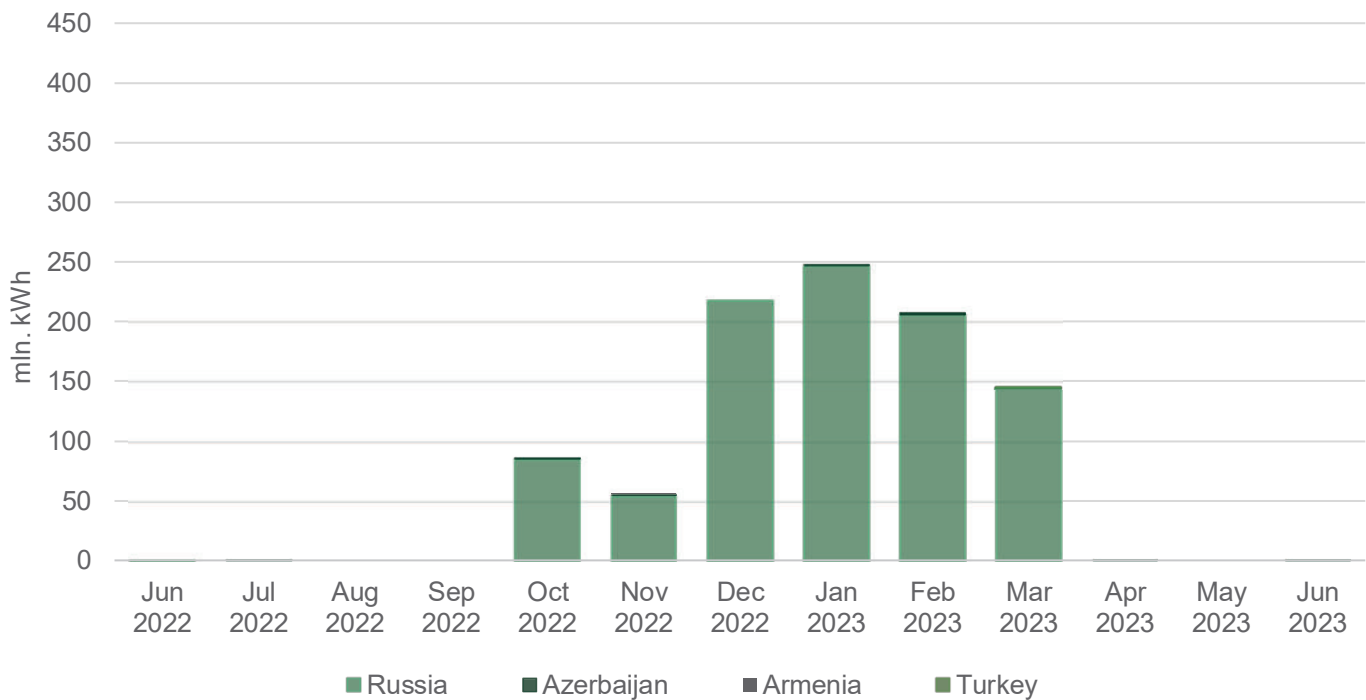
Figure 10 - Exports by Year



Source: ESCO

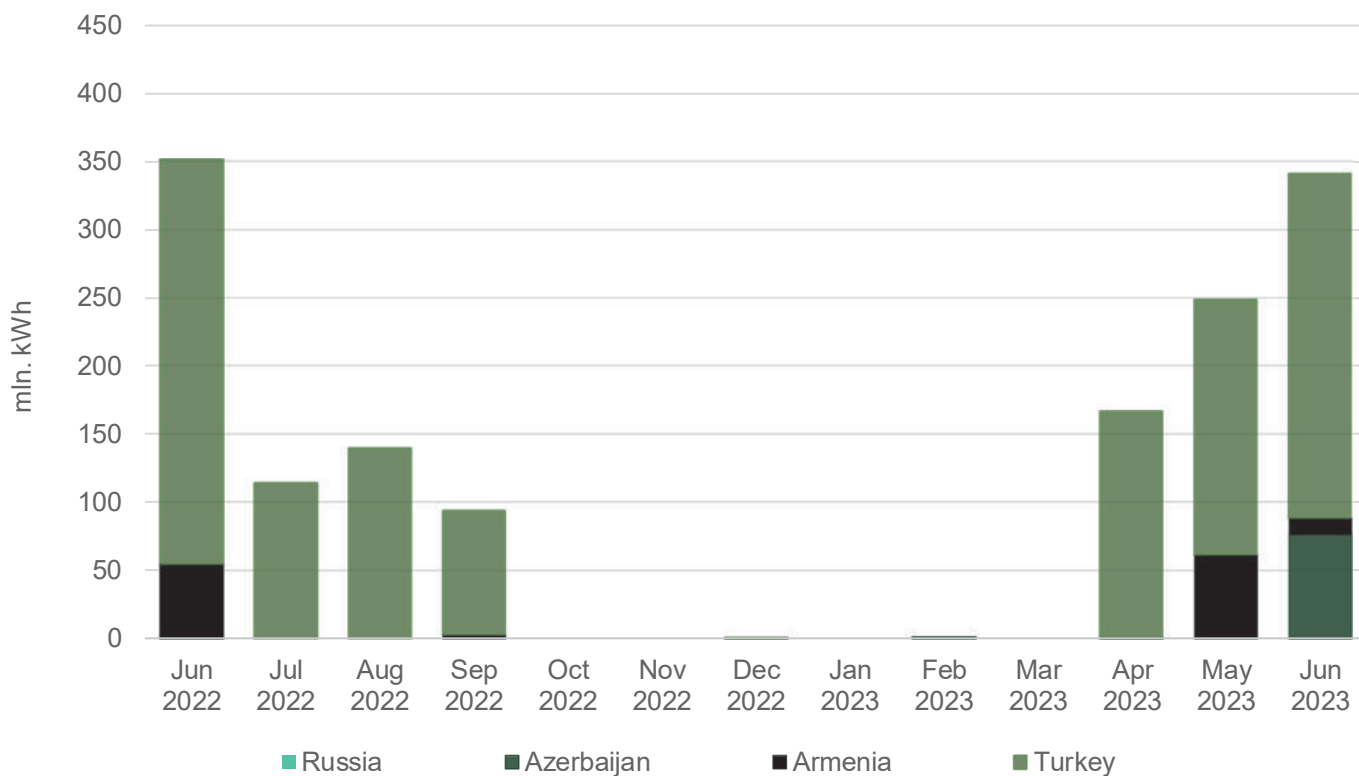
There were no electricity imports in May 2023 (Figure 11). Electricity exports increased by 37% in June 2023, compared to May 2023 (Figure 12).

Figure 11 - Imports by Month



Source: ESCO

Figure 12 - Exports by Month

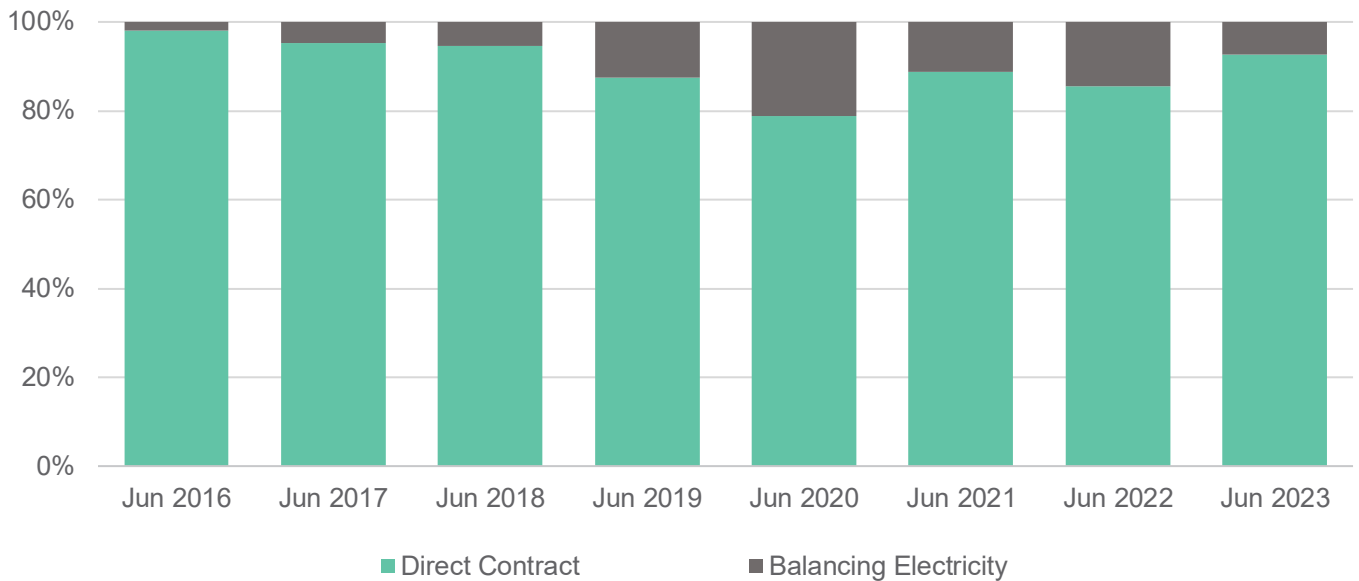


Source: ESCO

1. Market Operations

In June 2023, 93% of the electricity sold on/from the local market was sold through direct contracts. The remaining 7% was sold as balancing electricity (Figure 13).

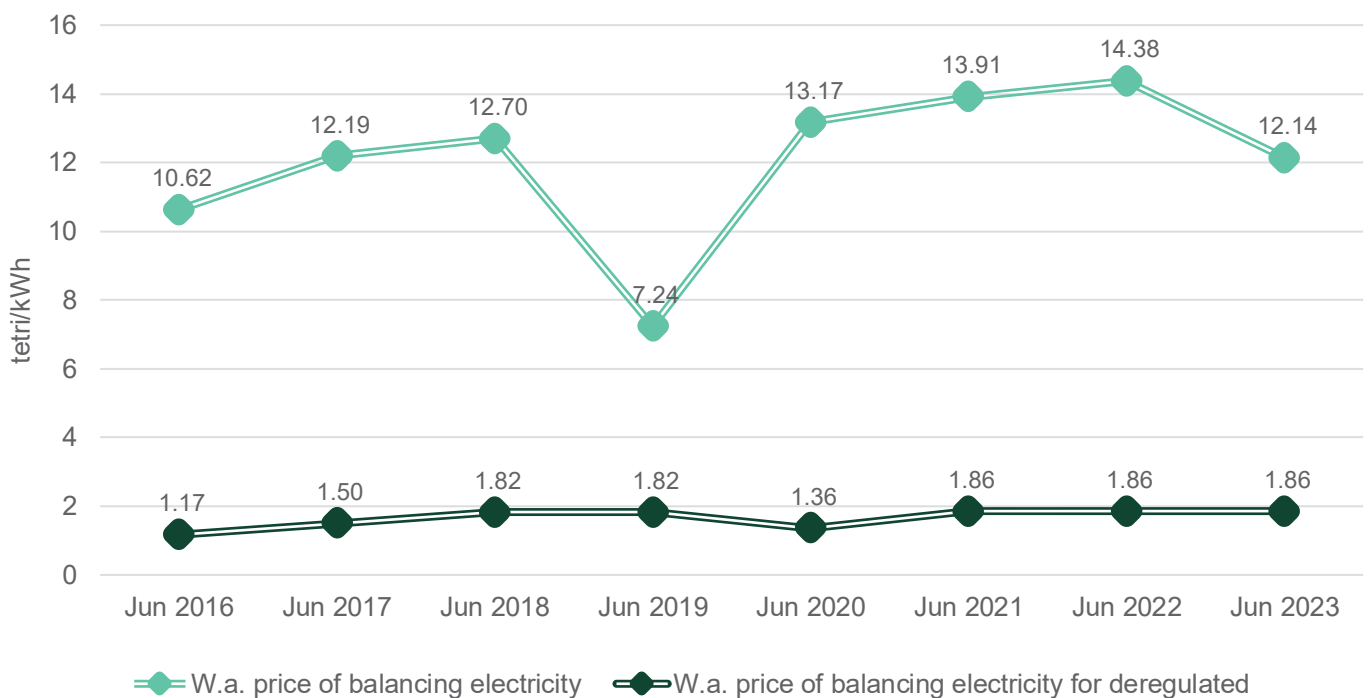
Figure 13 - Electricity Purchased / Sold Shares of Direct Contracts and Balancing Electricity



Source: ESCO

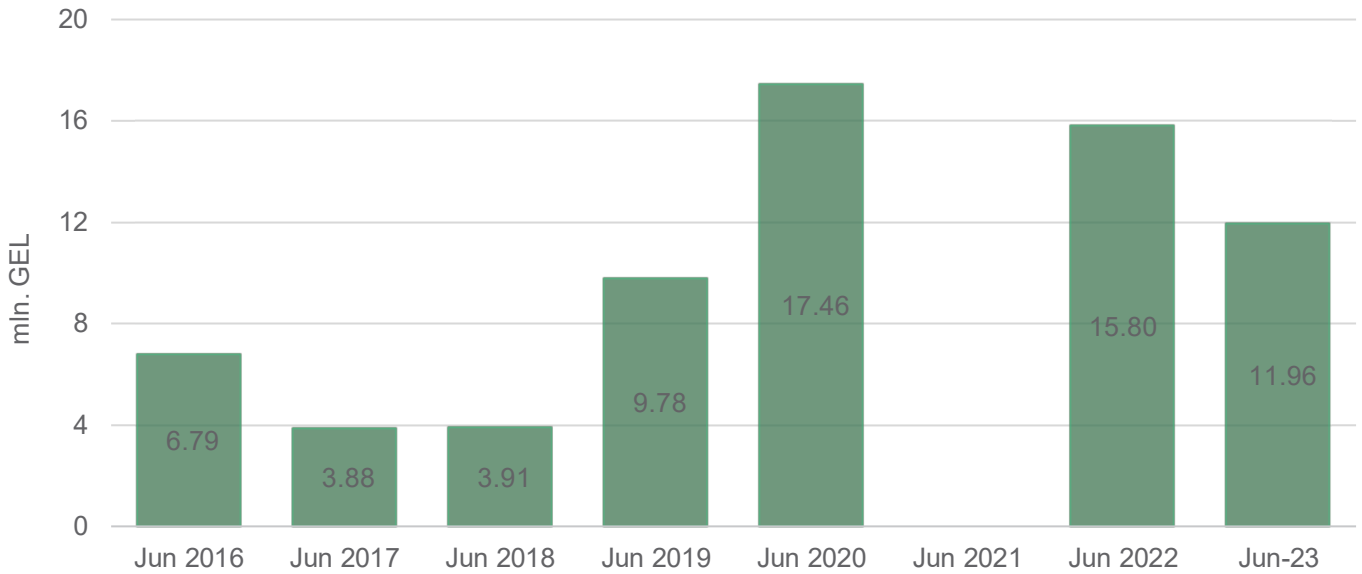
In June 2023, the weighted average price of balancing electricity was 12.14 tetri/kWh, which corresponds to an annual decrease of 16% compared to June 2022. As for the weighted average price for deregulated (small) HPPs, it was 1.86 tetri/kWh, same price as in June 2022 (Figure 14).

Figure 14 - Balancing Electricity Prices Weighted Average and Weighted Average Price for Deregulated HPPs



Source: ESCO

Guaranteed capacity payments in June 2023 were roughly 11.96 mln. GEL, which represents a 24% decrease compared to June 2022 (Figure 15).

Figure 15 - Cost of Guaranteed Capacity

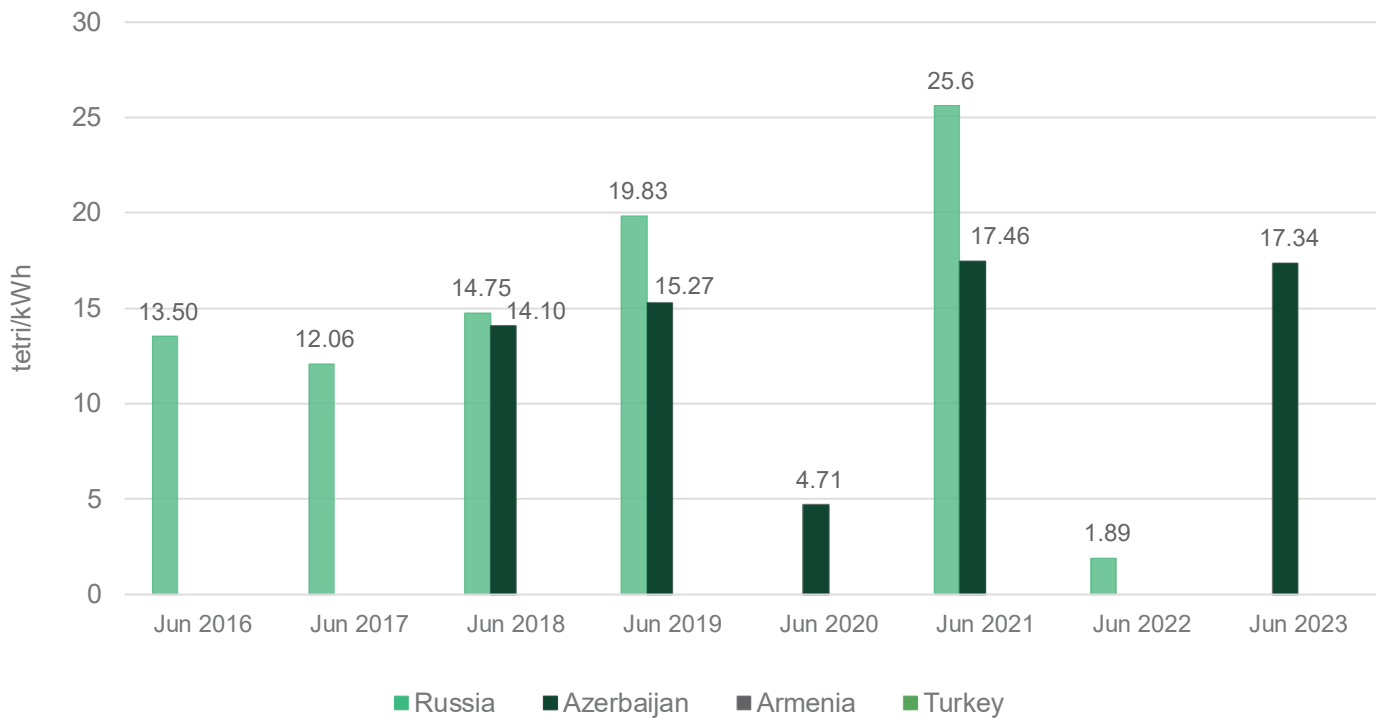
Source: ESCO

In June 2023 electricity import prices were 6.63 ϕ , or 17.34 tetri per kWh (Figure 16). This corresponds to an annual increase in price 9 times in USD and 8 times in GEL (prices were 0.64 ϕ , or 1.89 tetri per kWh in June 2022). There were no imports in May 2023, so we cannot evaluate the dynamics of prices in monthly terms. The electricity export prices in June 2023 were 6.54 ϕ , or 17.13 tetri per kWh (Figure 16). This corresponds to an annual decrease in price by 23% in USD and 32% in GEL (prices were 8.55 ϕ , or 25.27 tetri per kWh in June 2022). Compared to May 2023, export price decreased by 8% in USD and 5% in GEL (prices were 7.12 ϕ , or 18.05 tetri per kWh in May 2023).

Figure 16 - Prices Import/Export

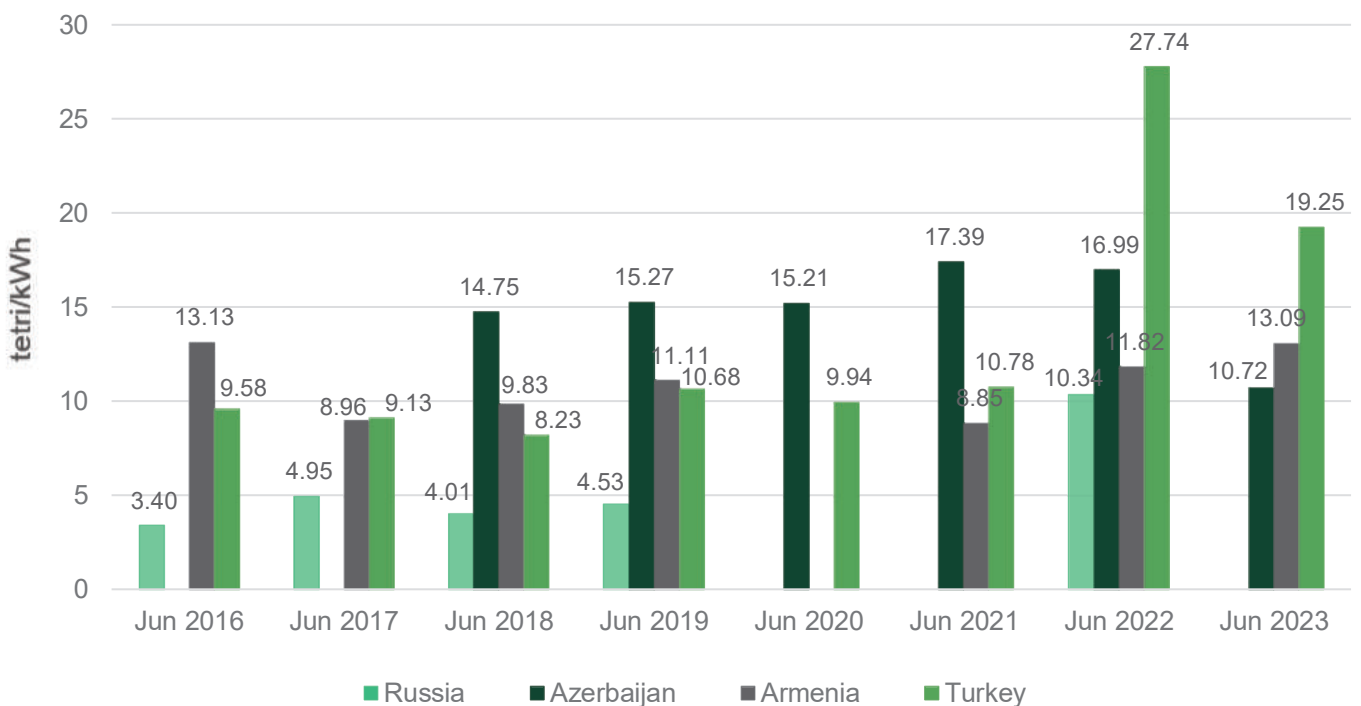
Source: ESCO

In June 2023, electricity import price from Azerbaijan stood at 6.63 ϕ or 17.34 tetri (Figure 17).

Figure 17 - Import Prices by Countries

Source: ESCO/Geostat

In June 2023, the electricity export price from Azerbaijan, Armenia and Turkey stood at 4.09 ϕ or 10.72 tetri, 5 ϕ or 13.09 tetri and 7.35 ϕ or 19.25 tetri, respectively (Figure 18).

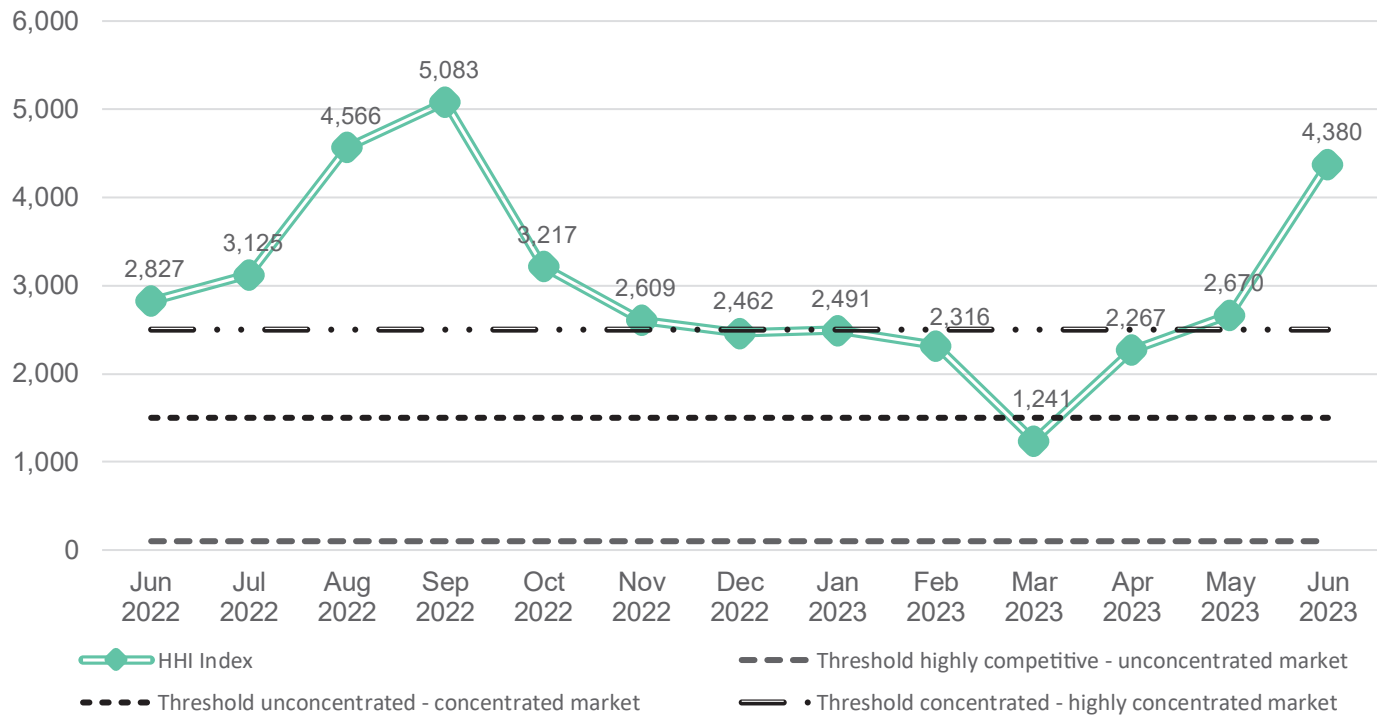
Figure 18 - Export Prices by Countries

Source: ESCO/Geostat

2. Market Concentration

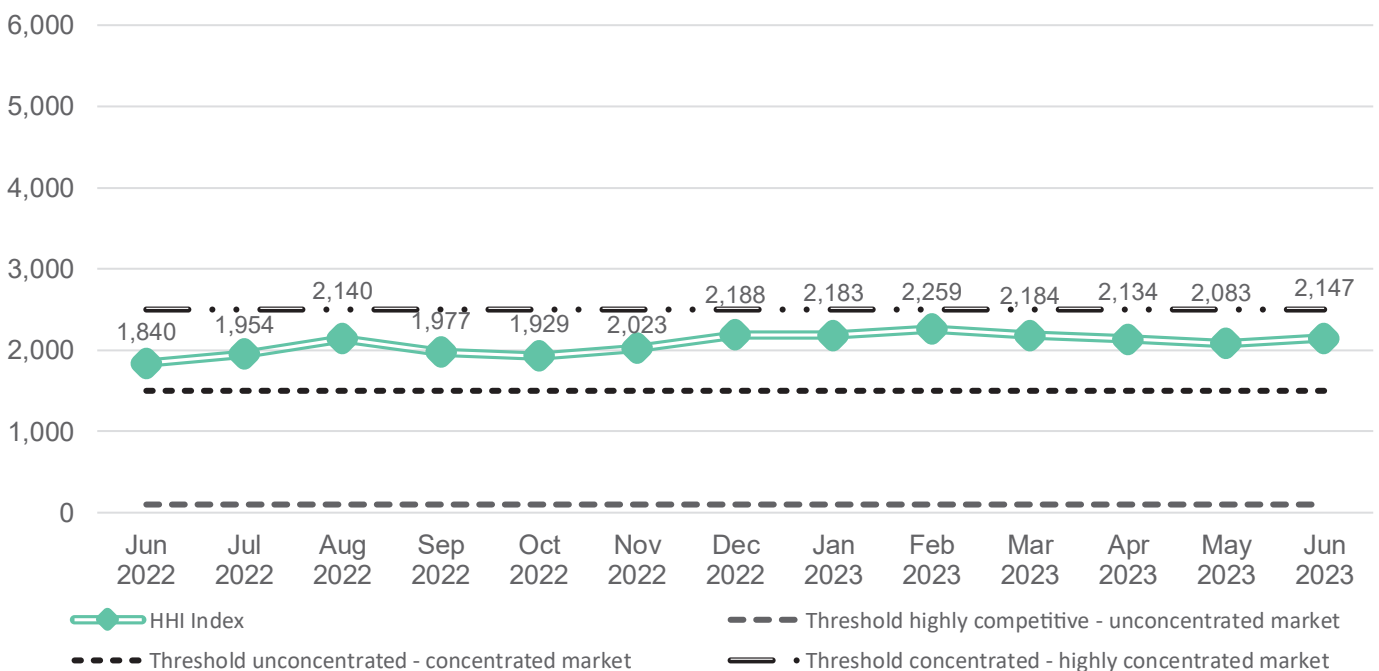
In conclusion, we utilize the Hirschman-Herfindahl (HHI) market concentration index to evaluate how competitive the generation and consumption segments of the market have been over the year. In June 2023, Georgian electricity generation market index remained above the threshold of highly concentrated market with an HHI value of 4,380 (Figure 19). This is higher than the level in June 2022 (with an HHI value of 2,827), and higher than the level in May 2023 (the HHI was 2,670). As for the consumption segment, in June 2023, the HHI consumption index remained below the threshold for a highly concentrated market, with an HHI value of 2,147 (above the level in June 2022 – 1,840 and the level in May 2023 – 2,083). In fact, September 2020 was the last month when the index value was above the level of highly concentrated market, which indicates that the market is becoming increasingly competitive (Figure 20).

Figure 19 - Hirschman-Herfindahl Index for Power Generation



Source: ESCO

Figure 20 - Hirschman-Herfindahl Index for Power Consumption



Source: ESCO